WHAT IS CLAIMED IS:

1. A flexible cable harness, comprising:

a plurality of flexible cables, each having a first end connected to a first object and a second end connected to a second object, at least one of the plurality of flexible cables contributing to an electrical connection between the first object and the second object,

each of the plurality of flexible cables comprising:

a curved portion that curves between the first end and the second end;

a first positioning system provided near the first end in the curved portion; and

a second positioning system provided near the second end in the curved portion, wherein a distance from the first positioning system to the second positioning system is different in each of the plurality of flexible cables such that more inward flexible cables located at the curved portion are shorter in distance between the first positioning system and the second positioning system, the first positioning system of each of the plurality of flexible cables is fixed to a first positioning part provided on or near the first object, the second positioning system of each of the plurality of flexible cables is fixed to a second positioning part provided on or near the second object, and each of the plurality of flexible cables are spaced in the curved portion.

2. The flexible cable harness according to claim 1, wherein the first object is a fixed member, the second object is a movable member, the first positioning system of each of the plurality of flexible cables is fixed to the first positioning part provided fixedly with the fixed member, and the second positioning system of each of the plurality of flexible cables is provided on or near the movable member and fixed to the second positioning part movable with the movable member.

3. The flexible cable harness according to claim 1, wherein the distance from the first positioning system to the second positioning system is set in each of the plurality of flexible cables such that a curvature radius of the curved portion is reduced by a specified amount as the flexible cables are located more inward at the curved portion.

4. The flexible cable harness according to claim 1, wherein the first positioning system and the second positioning system are integral with each of the plurality of flexible cables.

5. The flexible cable harness according to claim 1, wherein the first positioning system and the second positioning system are separate pieces and added to each of the plurality of flexible cables.

6. The flexible cable harness according to claim 1, wherein the flexible cables are set in position by engagement of the first positioning system with the first engagement part and the second positioning system with the second engagement part.

7. The flexible cable harness according to claim 1, wherein each of the first positioning system and the second positioning system is provided on a shorter side of each of the plurality of flexible cables, and includes a hole provided beyond a width of each of the plurality of flexible cables, the hole is engaged with a corresponding protrusion provided on each of the first positioning part and the second positioning part in order to set the cables in place.

8. The flexible cable harness according to claim 1, wherein each of the first positioning system and the second positioning system include two holes spaced from each other and outside along the width of each of the flexible cables, and each of the first positioning part and the second positioning part includes two protrusions corresponding to the two holes.

9. An image forming apparatus including the flexible cable harness according to claim 2, wherein the fixed member is a control circuit board fixed to a frame, the movable member is a carriage mounting a recording head thereon, and the flexible cable harness is connected to the control circuit board on the first end and the carriage on the second end.

10. The image forming apparatus according to claim 9, wherein the frame includes left and right side plates supporting a guide shaft that guides the carriage in a movable direction and a rear frame provided between the left and right side plates, and the carriage has a substantially box shape and two sides for positioning the recording head, the first positioning part is disposed at a substantially central portion of the rear frame with respect to a left to right direction thereof, and the second positioning part is disposed on one of the two sides of the carriage.

11. The image forming apparatus according to claim 10, wherein the first positioning part and the second positioning part include protrusions engageable with the holes of the first positioning system and the second positioning system and lids that cover and fix the first positioning system and the second positioning system respectively.

12. The image forming apparatus according to claim 10, wherein the second positioning part is provided with a guide portion that guides the flexible cable harness extending from the first positioning part therein invariably at a specified angle relative to a direction perpendicular to a travel direction of the carriage.

13. The image forming apparatus according to claim 12, wherein the guide portion includes a pair of guide members to pinch and guide the flexible cable harness from both sides thereof.

14. The image forming apparatus according to claim 12, wherein the specified angle is from 35° to 60°.

15. The image forming apparatus according to claim 1, wherein the plurality of flexible cables are tied in a bundle.

16. A method of forming a flexible cable harness, comprising:

connecting a first positioning system provided near a first end and a second positioning system provided near a second end of a first cable to a first positioning part provided on or near a first object and a second positioning part provided on or near a second object, respectively, the first cable having a curved portion that curves between the first end and the second end;

connecting a third positioning system provided near a first end and a fourth positioning system provided near a second end of a second cable to the first positioning part provided on or near the first object and the second positioning part provided on or near the second object, respectively, the second cable having a curved portion that curves between the first end and the second end, wherein a distance from the first positioning system to the second positioning system is shorter than a distance between the third positioning system and the fourth positioning system and the first cable and the second cable are spaced in the curved portion.

17. The method of forming a flexible cable harness according to claim 16, wherein the flexible cable harness is formed in an image forming apparatus.

18. The method of forming a flexible cable harness according to claim 17, wherein the second positioning part guides the first cable and the second cable extending from the first positioning part therein invariably at a specified angle relative to a direction perpendicular to a travel direction of a carriage associated with the image forming apparatus.

19. A flexible cable harness, comprising:

a plurality of flexible cables, each having a first end connected to a first object and a second end connected to a moveable second object, at least one of the plurality of flexible cables contributing to an electrical connection between the first object and the second object,

each of the plurality of flexible cables comprising:

a curved portion that curves between the first end and the second end;

a first positioning system provided near the first end in the curved portion; and

a second positioning system provided near the second end in the curved portion, wherein the first positioning system of each of the plurality of flexible cables is fixed to a first positioning part provided on or near the first object, the second positioning system of each of the plurality of flexible cables is fixed to a second positioning part provided on or near the second object, and the second positioning part is provided with a guide portion that guides the flexible cable harness extending from the first positioning part therein invariably at a specified angle relative to a direction perpendicular to a travel direction of the second object.

20. The flexible cable harness according to claim 19, wherein a distance from the first positioning system to the second positioning system is different in each of the plurality of flexible cables such that more inward flexible cables located at the curved portion are shorter in distance between the first positioning system and the second positioning system and each of the plurality of flexible cables are spaced in the curved portion.